REMARKS/ARGUMENTS

Claims 1-37 are currently pending in the present patent application.

Once again, the Applicants' attorney notes the Examiner's provisional double-patenting rejection of claims 1-37 and will respond to this rejection in the appropriate manner at such time as the allegedly conflicting claims are allowed.

In an Advisory Action mailed on 23 March 2006, the Examiner maintained her rejections of claims 1-37 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,469,361 to Moyne ("Moyne").

Before addressing the Examiner's rejections of the claims , the disclosed embodiments of the invention will briefly be discussed in comparison to the applied reference in order to help the Examiner appreciate certain distinctions between the pending claims and the subject matter of the applied Moyne reference. Specific distinctions between the pending claims and the applied reference will be discussed after the discussion of the disclosed embodiments and the applied reference. This discussion of the differences between the disclosed embodiments and applied reference does not define the scope or interpretation of any of the claims.

Referring to Figures 1-3 of the present application, for example, a configuration module 332 configures a framework services module 330 (translation interface) to communicate with a signal exchange module 214 (hardware subsystem) using information that is stored in a database 400 and that describes the signal exchange module 214. In the system 100 of Figure 1, one wishes application software 530 running on a server system 500 to communicate with sensing and/or controlled devices 120. An example of a sensing device 120 is a temperature sensor and an example of a controlled device is a LED indicator lamp.

The data generated by the sensing devices 120 and received by the controlled devices 120 may be in a format that is not directly compatible with the application software 530. As a result, the system 100 includes at least one signal exchange module 214 and the framework services module 330 in order to interface the devices 120 to the application software 530. For example, a sensing device 120 may be a temperature sensor that generates a continuous analog optical or an electrical signal having an amplitude that is proportional to the sensed temperature. But the application software 530 typically processes only digital values, and may need to receive

temperature information only when the temperature is outside of a predetermined range. Therefore, the signal exchange module 214, which may be a plug-in board in a client computer system 300 (Figure 2), which is part of the framework and interface system 200, converts the analog signal from the temperature sensor into a digital value, and provides this value to a to the framework services module 330 according to a predetermined set of parameters. These parameters may include a port number, the bit size of the digital value, a rate at which the module 214 provides the digital values, the size and location of a memory buffer (not shown) into which the module 214 loads the data values, and the purpose of each bit in the value (e.g., polarity, analog-signal frequency, etc.). The framework services module 330 then converts the digital values from the module 214 into a format acceptable to the application software 530. For example, the framework services module 330 may convert a digital value from the module 214 representing the amplitude of the analog signal from the temperature sensor into a corresponding digital value that indicates the measured temperature in degrees Celsius, and may provide this digital value to the application software 530 only if the measured temperature is greater than 80° C. or less than 0° C.

If one upgrades a sensing and/or controlled device 120, then he may have to reconfigure/replace the signal exchange module 214 accordingly. For example, suppose one updates the above-discussed temperature sensor to a sensor that generates a continuous analog signal having a frequency and not an amplitude that is proportional to the temperature. One must then reconfigure/replace the module 214 to/with a module having a faster analog-to-digital converter and providing the digital values representing the analog-signal frequency on two ports (alternating between each port to limit the bandwidth on each port) of the client computer system 300.

After reconfiguring/replacing the module 214, one updates the description of the reconfigured/replaced signal exchange module 214 in the signal data base 400 (Figure 1). Next, the client computer system 300 executes the configuration module 332 (Figure 3), which retrieves the updated description of the reconfigured/replaced signal exchange module 214 from the data base 400, and reconfigures the framework services module 330 accordingly. Continuing with the above example, the configuration module 332 reconfigures the framework services module 330 to receive digital values from the reconfigured/replaced signal exchange module 214 on two ports and to convert these

values, which now represent the frequency of the analog temperature signal instead of the amplitude, into digital values that represent temperature in degrees Celsius.

An advantage of the configuration module 332 is that one need not manually reconfigure or replace the framework services module 330. For example, suppose that the system 100 includes one hundred temperatures sensors 120, and includes one hundred corresponding client computer systems 300 (one for each sensor) each including a respective signal exchange module 214 and framework services module 330. Without the configuration module 332, one would have to rewrite the software code that composes the framework services module 330, debug the rewritten code, and then install the rewritten code on each of the one hundred computer systems 300. This takes time and resources. In contrast, with the configuration module(s) 332 (one on each computer system 300, or a common configuration module on the server system 500), one updates the data base 400 only once regardless of the number of framework services modules 330 to be reconfigured.

The framework services module 330 may further include an event coding/decoding module 336 that encodes data signals received from signal exchange modules 214 into corresponding events directed to application software 530 during system operation. The event coding/decoding module 336 may further transform events received from application software 530 into data signals directed to appropriate signal exchange modules 214, after which one or more hardware interface modules 350 may deliver such data signals thereto to effectuate subsystem control. In one embodiment, an event comprises an event identifier and one or more data values representing the data signal that corresponds to the event identifier. The encoding, mapping, and/or encapsulation of data signals into event messages disassociates data signal content from format variations arising from signal exchange module 214 and/or sensing and/or control subsystem element 120 implementation details.

Amended claim 1 recites a hardware subsystem that includes at least one component adapted to carry an electrical signal associated with one from the group of a sensing operation and a control operation, an application database storing application service configuration information that corresponds to a manner of processing information associated with the electrical signal, and a self-configuring application services system comprising a configuration module coupled to the hardware subsystem

and coupled to retrieve application service configuration information from the application database. The self-configuring application services system is operable to configure itself for communication with the hardware subsystem using the application service configuration information, with this configuration including associating an event code with the electrical signal.

The Moyne patent neither discloses nor suggests a hardware subsystem as recited in amended claim 1 that associates an event code with an electrical signal. As previously discussed by the undersigned in the prior response filed, Moyne relates to a generic cell controller 20 that receives messages containing data. Moyne discloses calling required routines as determined from the database 22, and then executing these routines. No discussion or suggestion is given of associating electrical signals, such as signals from a temperature sensor, accelerometer, or a signal to drive an LED lamp with an event code. As previously mentioned, such event codes disassociates data signal content from format variations arising from different types of electrical signals being processed. Moyne is directed to easily duplicating repeated functionality among controllers and not to facilitating the handling of various types of electrical signals by the same controller without complete redesign of the system.

For these reasons, the combination of elements recited in amended claim 1 is allowable. Independent claims 12, 23 and 29 are allowable for reasons similar to those discussed for claim 1. All dependent claims are allowable for at least the same reasons as the associated independent claim and due to the additional limitations added by each of these claims.

The present patent application is in condition for allowance. Favorable consideration and a Notice of Allowance are respectfully requested. Should the Examiner have any further questions about the application, Applicant respectfully requests the Examiner to contact the undersigned attorney at (425) 455-5575 to resolve the matter. If any need for any fee in addition to that paid with this response is found, for any reason or at any point during the prosecution of this application, kindly consider this a petition therefore and charge any necessary fees to Deposit Account 07-1897.

Respectfully submitted,

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